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Nome River Salmon Counting Tower
Project Summary Report, 1994

by

Peter J. Rob

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INTRODUCTION

The Nome River drains into Norton Sound approximately three miles east of Nome. Commercial fishing has been gradually reduced through regulatory restrictions since the late 1970s and the marine waters near the mouth were closed in 1984. The Nome River currently supports a large number of subsistence and sport users, however their fishing opportunities generally continue to decrease as fewer salmon return to the river most years. The subsistence and sport fisheries are now managed at a level of intensity similar to a commercial fishery, with Emergency Orders regulating restrictions and fishing periods.

Since 1993 a salmon counting tower has been operated on the Nome River (Bue 1994). In 1994 the project ran from 24 June to 15 August and counted the returns of chum, pink, king, and coho salmon and of Dolly Varden. The project operates as a means to obtain timely and accurate escapement information that is required to actively manage the stocks throughout the season.

OBJECTIVES

1. Obtain daily and seasonal estimates of the timing and magnitude of the salmon escapement, by species, to the Nome River.
2. Estimate the age, sex, and length composition of the chum salmon escapement to the Nome River.
3. Obtain daily and seasonal estimates for the timing and magnitude of the Dolly Varden escapement to the Nome River.

METHODS

The Nome River tower camp is approximately 3 miles upstream from the mouth of the river, on land leased to the Alaska Department of Fish & Game (ADF&G) by the Sitnasuak Native Corporation (Figure 1).

The crew began working on 20 June, 1994. After inventorying equipment and purchasing supplies, they ferried equipment to the tower site by truck and jet boat. Then the tents were put up.

A 50 foot vinyl canvas flash panel placed on the river bottom provided a contrasting background where fish species could easily be identified. The flash panel covered approximately half the width of the river. The shore end of the flash panel was placed next to the cut bank on the camp side of the river. An aircraft cable threaded through

grommets along the upstream edge of the flash panel was staked at each end to hold the panel in place. Sandbags placed at intervals along the cable edge of the panel held it down on the stream bottom to prevent fish from moving under the panel.

A 15 foot high aluminum scaffold was assembled on the bank directly in line with the flash panel and about three feet from the edge of the river. The scaffold was used as a tower from which fish were observed and enumerated as they passed over the flash panel. The tower was guyed by aircraft cables tied off to stakes in the ground. Planks were used as footings and sandbags placed on boards set across the lowest rungs of the scaffolding provided a low center of gravity and stability.

A weir was built from the midstream end of the flash panel to the shore opposite the tower. The weir ensured that all fish passed over the flash panel. The weir was built of 1¼" steel thaw pipe used as posts and livestock fencing.

A 12 volt lighting system was installed to illuminate the flash panel during dark periods. These lights were powered by an automotive battery that was recharged using a portable generator.

The crew traveled to Nome for their days off and also to pick up groceries, supplies and mail. Nome office staff transported the crew to and from the Nome River highway bridge and provided other logistical support.

The counting schedule began at 1300 hours on 24 June 1994. The two person crew counted 18 half-hour counts each day from noon to 0600 hours the following day except for the day off and days of 24 hour counts. Sundays were the normal day off. On the day following the day off, the crew counted 24 half-hour counts from 1800 hours to 1800 hours the following day. The daily counts considered in this report ran from midnight to midnight the following day.

The counts for each half hour shift were doubled to produce the reported hourly counts for each species. Each day the reported hourly counts were added to produce a daily total. Every day, the daily and cumulative totals for each species were relayed to the Nome office by radio.

The expanded counts for this report were calculated as follows. The 18 hour counts for the day off were estimated by adding the counts of each hour of the day before to the counts of each hour of the day following and dividing the result by two, giving expanded hourly counts for 18 hours of the day off. Next an expansion factor was calculated to compensate for the 6 hours not normally counted. This factor was derived from the weekly 24 hour count by dividing the total count from 0600 hours to 1200 hours during the 24 hour count by the total normal 18 hour count during the 24 hour count. The expansion factor was applied to data from the three days before and after each 24 hour count by multiplying each days 18 hour total by the 24 hour expansion factor, and adding

that number to the 18 hour count for each day. This expansion was done for all species counted.

Scales were taken, lengths measured, and sex identified from 99 chum salmon that were collected in conjunction with eggtakes for the Nome River Salmon Restoration project.

RESULTS

Table 1 shows the expanded daily and cumulative totals for each species.

The expanded counts were: 2,893 chum salmon, 141,246 pink salmon, 54 king salmon, 726 coho salmon, and 170 Dolly Varden (Tables 2-6). The reported total hourly counts were: 2,980 chum salmon, 276,782 pink salmon, 50 king salmon, 490 coho salmon, and 146 Dolly Varden (Tables 7-11). Figure 2 shows a graph of the cumulative expanded passage of all species counted, except pink salmon. Figures 3-12 show graphs of the expanded daily totals and the cumulative expanded daily totals for each species counted.

Counting began on 24 June. Pink salmon were first observed on 25 June, chum salmon were first observed eight days later on 3 July, king salmon were first observed on 4 July, coho salmon were first observed on 23 July, and Dolly Varden were first observed on 26 June (Table 1). The daily peak of 407 chum salmon occurred on 14 July, the daily peak of 27,085 pink salmon occurred on 14 July, the daily peak of 88 coho salmon occurred on 8 August, and the daily peak of 40 Dolly Varden occurred on 10 July (Table 1).

All species counted exhibited a diurnal pattern of migration past the counting tower. Most chum salmon migration occurred during the hour from midnight to 0100, when 20% passed the tower. During the six hour period from 2100 through 0200 hours, 84% of the chum salmon passed the tower. There was a -14% downstream migration of chum salmon during the six hour period from 0600 through 1200 hours (Table 2 and Figure 13). Most pink salmon upstream migration occurred from 2100 to 0300 hours (Table 3 and Figure 14). Most king salmon migration occurred during the hour from 2000 to 2100 hours, when 31% passed the tower (Table 4 and Figure 15). Most coho salmon migration occurred during the hour from midnight to 0100, when 12% passed the tower (Table 5 and Figure 16). Most Dolly Varden migration occurred during the hour from 1800 to 1900 hours, when 19% passed the tower). There was a -15% downstream migration of Dolly Varden during the hours from 0400 to 0600 (Table 6 and Figure 17).

Analysis of the chum salmon scale samples showed that 63.7% of the fish sampled were age-0.3, 35.4% were age-0.4 and 1.0% were age-0.5 (Table 12).

Climatological and stream observations are shown in Table 13.

DISCUSSION

This was the second year of operation for the Nome River tower project. The project ran well this year and provided timely escapement information that was used for inseason fisheries management. The Nome River counting tower was the only escapement project operating in the Nome subdistrict during 1994.

The Nome River counting tower documented a weak return of chum salmon and a strong return of pink salmon in 1994. The ratio of chum to pink salmon from the Nome River tower was applied to aerial and boat survey information from other rivers in the subdistrict because the large numbers of pink salmon present in the rivers made aerial counting of chum salmon difficult. Subsistence and sport fishing for chum salmon in the subdistrict remained closed throughout the season. Subsistence and sport fishing regulations were relaxed in the subdistrict for pink salmon.

Effective on 8 August the Nome Subdistrict was closed to subsistence and sport fishing for coho salmon fishing. Data provided by this project and by aerial and boat surveys of the Nome River and the other area rivers documented a weak return of coho salmon to the subdistrict.

River conditions this year were fair for the first five weeks of the season. Water levels began to rise on 31 July and observation became difficult because of muddy water. On 9 August the water rose over the top of the weir and counting was suspended (Table 13). In very high water conditions salmon migration is typically minimal and was probably delayed by this high water event.

An aerial survey count of 265,450 pink salmon was made on 19 July, 1994. The total tower count of pink salmon was 141,246 (Table 1). The aerial survey counted 188% of the total season tower count of pink salmon. On 19 July the cumulative tower count of pink salmon was 54,407 (Table 1), meaning the aerial survey counted 487% of cumulative tower count through that date. This result, where the aerial survey counted almost five times as many pink salmon above the tower than the tower count, points out a problem with the counting schedule, the expansion methodology, and aerial surveys of very large returns. The 24 hour count on 18 July observed a strong downstream migration during the period from 0100 to 1000 hours and the final count for the day was -260. The expansion factor derived from this 24 hour count was -1.033. When this expansion factor was applied to the 18 hour count for 15 July, the reported count of 83,324 was expanded to a count of -2,775. However, there was no comparable downstream migration of pink salmon observed on 15 July during the same hours of the 18 hour count that had downstream migration on 18 July. The five other 18 hour count days that used the 18 July expansion factor were similarly affected, the reported counts for 15 - 17 July and 19 - 21 July totaled 139,343 pink salmon, while the total expanded count for the same days was -5,494 pink salmon (Tables 3 and 8). This problem is inherent in the current sampling design and estimator. Research into improved methodology is planned for the future.

An aerial survey count of 350 chum salmon was made on 19 July, 1994. The total season tower count of chum salmon was 2,893 (Table 1). The aerial survey counted 12% of the total season tower count of chum salmon. The cumulative tower count of chum salmon through 19 July was 2,128 (Table 1), meaning the aerial survey counted 16% of the cumulative tower count through 19 July. Aerial counting of chum salmon was difficult because of the large numbers of pink salmon in the river.

An aerial survey count of 631 coho salmon was made on 22 August, 1994. The total season tower count of coho salmon was 726 (Table 1). Tower counting ceased on 9 August because of flooding. The tower was scheduled to stop counting on 12 August. In the future, the tower should continue to operate until at least 31 August to provide adequate escapement information for the management of coho salmon.

The Nome River counting tower operated from 25 July to 28 August in 1993. Data can be compared for the period from 25 July through 8 August in 1993 and 1994. The returns of chum, king and coho salmon were less and the return of pink salmon was greater during this time period in 1994. Dolly Varden were not counted during this period in 1993. During the comparable time period the expanded count of pink salmon was 10,377 in 1993 and was 56,013 in 1994. During the comparable time period the expanded count of chum salmon was 1,183 in 1993 and was 506 in 1994. During the comparable time period the expanded count of king salmon was 44 in 1993 and was 4 in 1994. During the comparable time period the expanded count of coho salmon was 2,186 in 1993 and was 593 in 1994.

ACKNOWLEDGEMENTS

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LITERATURE CITED

Bue, F. 1994. Nome River Salmon Counting Tower Project Summary Report, 1993. ADF&G, CFM&D Division, AYK Region, Regional Information Report No. 3A94-26.

Table 1. Expanded daily and cumulative migration of all species past the Nome River counting tower, Norton Sound, 1994.

Date	Daily chum salmon	Cumulative chum salmon	Daily pink salmon	Cumulative pink salmon	Daily king salmon	Cumulative king salmon	Daily coho salmon	Cumulative coho salmon	Daily Dolly Varden	Cumulative Dolly Varden
24-Jun	0	0	0	0	0	0	0	0	0	0
25-Jun	0	0	-1	-1	0	0	0	0	0	0
26-Jun	0	0	10	9	0	0	0	0	-5	-5
27-Jun	0	0	0	9	0	0	0	0	-10	-15
28-Jun	0	0	4	13	0	0	0	0	0	-15
29-Jun	0	0	2	15	0	0	0	0	-2	-17
30-Jun	0	0	0	15	0	0	0	0	4	-13
1-Jul	0	0	16	31	0	0	0	0	2	-11
2-Jul	0	0	-6	25	0	0	0	0	0	-11
3-Jul	3	3	4	29	0	0	0	0	8	-3
4-Jul	40	43	126	155	2	2	0	0	22	19
5-Jul	47	90	43	198	0	2	0	0	32	51
6-Jul	59	150	18	216	2	4	0	0	8	59
7-Jul	12	162	16	232	0	4	0	0	0	59
8-Jul	48	209	182	415	-2	2	0	0	14	73
9-Jul	81	291	1,018	1,432	2	4	0	0	34	107
10-Jul	146	437	1,879	3,312	1	5	0	0	40	147
11-Jul	256	693	8,424	11,736	8	13	0	0	12	159
12-Jul	139	832	5,835	17,571	2	15	0	0	-2	157
13-Jul	226	1,058	15,679	33,250	4	19	0	0	0	157
14-Jul	407	1,465	27,085	60,335	4	23	0	0	0	157
15-Jul	207	1,671	-2,775	57,561	2	25	0	0	0	157
16-Jul	71	1,742	-1,128	56,433	-2	22	0	0	0	157
17-Jul	32	1,774	-381	56,051	-2	20	0	0	0	157
18-Jul	66	1,840	-260	55,791	6	26	0	0	0	157
19-Jul	288	2,128	-1,384	54,407	3	29	0	0	4	161
20-Jul	5	2,133	66	54,474	0	29	0	0	0	161
21-Jul	-15	2,118	108	54,582	3	32	0	0	0	161
22-Jul	108	2,226	12,823	67,405	2	34	0	0	0	161
23-Jul	56	2,282	7,313	74,718	7	41	5	5	3	164
24-Jul	69	2,351	10,422	85,140	9	50	10	15	6	170
25-Jul	134	2,485	20,864	106,004	0	50	2	17	0	170
26-Jul	128	2,613	13,125	119,129	2	52	52	69	0	170
27-Jul	140	2,753	10,958	130,087	2	54	82	151	0	170
28-Jul	22	2,775	2,306	132,393	0	54	14	165	0	170
29-Jul	4	2,779	1,701	134,094	0	54	16	181	0	170
30-Jul	25	2,804	1,619	135,713	0	54	40	221	0	170
31-Jul	10	2,814	564	136,277	0	54	52	273	0	170
1-Aug	3	2,817	498	136,775	0	54	34	307	0	170
2-Aug	5	2,822	282	137,057	0	54	4	311	0	170

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Table 1. (Page 2 of 2)

Date	Daily chum salmon	Cumulative chum salmon	Daily pink salmon	Cumulative pink salmon	Daily king salmon	Cumulative king salmon	Daily coho salmon	Cumulative coho salmon	Daily Dolly Varden	Cumulative Dolly Varden
3-Aug	8	2,830	637	137,694	0	54	38	349	0	170
4-Aug	6	2,836	843	138,537	0	54	52	401	0	170
5-Aug	6	2,842	652	139,188	0	54	20	421	0	170
6-Aug	6	2,848	612	139,801	0	54	45	466	0	170
7-Aug	3	2,851	544	140,345	0	54	54	520	0	170
8-Aug	6	2,857	808	141,153	0	54	88	608	0	170
9-Aug	30	2,887	67	141,220	0	54	76	684	0	170
10-Aug	0	2,887	0	141,220	0	54	0	684	0	170
11-Aug	0	2,887	0	141,220	0	54	0	684	0	170
12-Aug	0	2,887	0	141,220	0	54	0	684	0	170
13-Aug	0	2,887	0	141,220	0	54	0	684	0	170
14-Aug	0	2,887	0	141,220	0	54	0	684	0	170
15-Aug	6	2,893	26	141,246	0	54	42	726	0	170

Table 2. Expanded daily hourly chum salmon migration past the Nome River counting tower, Norton Sound, 1994.

Shaded areas indicate hours not counted. Numbers in shaded areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600-1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
24-Jun	Start of the counting season							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
25-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
26-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
27-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
28-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
29-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
30-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
1-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
2-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
3-Jul	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0.1%
4-Jul	0	4	6	2	4	4	-6	0	0	0	0	0	0	4	0	10	0	2	10	40	1.4%	
5-Jul	42	-12	-6	-2	0	-2	-7	0	0	0	0	0	0	0	0	0	0	10	24	47	1.6%	
6-Jul	4	14	46	-6	0	0	-9	0	0	0	0	0	0	0	0	0	2	8	0	59	2.0%	
7-Jul	0	0	8	6	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	12	0.4%	
8-Jul	2	4	20	10	8	4	0	0	0	0	0	0	0	0	0	0	0	0	0	48	1.6%	
9-Jul	6	16	6	6	6	2	-1	0	0	0	0	0	0	8	2	0	2	5	23	81	2.8%	
10-Jul	19	21	9	11	6	0	-1	0	1	0	0	0	0	16	4	0	4	10	46	146	5.0%	
11-Jul	32	26	12	16	6	-2	-2	0	2	0	0	0	0	0	4	26	40	64	32	256	8.8%	
12-Jul	42	44	6	4	0	0	-1	0	0	0	0	0	0	0	0	0	8	26	10	139	4.8%	
13-Jul	22	14	36	10	2	2	-2	0	0	0	0	0	0	4	8	20	16	84	10	226	7.8%	
14-Jul	38	54	8	-8	0	0	-3	0	0	0	0	0	0	0	2	10	74	176	56	407	14.1%	
15-Jul	102	14	46	30	4	6	-131	0	4	10	30	8	18	0	8	0	24	18	16	207	7.1%	
16-Jul	28	36	6	0	0	0	-45	0	0	0	0	8	2	0	4	1	10	10	11	71	2.5%	
17-Jul	16	17	9	-4	-2	-9	-20	0	1	0	6	8	4	0	0	2	-4	2	6	32	1.1%	
18-Jul	4	-2	12	-8	-4	-18	-42	0	2	0	12	8	6	14	0	0	4	12	66	66	2.3%	
19-Jul	96	96	50	26	34	30	-184	0	2	16	6	36	12	14	14	16	8	16	0	288	10.0%	
20-Jul	0	2	2	0	0	0	-3	0	0	4	0	0	12	8	0	0	0	0	-20	5	0.2%	
21-Jul	-6	-12	-4	0	-2	-4	9	0	0	0	0	0	2	4	0	0	-2	0	0	-15	-0.5%	
22-Jul	26	10	2	0	0	-2	2	0	0	0	6	24	26	4	4	0	4	0	2	108	3.7%	
23-Jul	6	6	2	2	0	0	1	0	0	0	10	0	8	3	4	4	5	3	2	56	1.9%	

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Table 2. (Page 2 of 2).

Shaded areas indicate hours not counted. Numbers in shaded areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600-1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total		
24-Jul	7	9	1	2	-2	3		1	1	-1	2	8	6	4	2	4	8	6	6	2	69	2.4%	
25-Jul	8	12	0	2	-4	6		2	2	-2	4	6	12	0	0	10	6	12	8	50	134	4.6%	
26-Jul	20	16	8	0	0	4		2	2	0	0	4	-2	6	2	8	6	2	12	38	128	4.4%	
27-Jul	50	36	10	4	2	6		2	0	0	2	0	4	2	2	4	2	10	4	0	140	4.8%	
28-Jul	4	8	0	2	0	4		0	0	0	0	0	0	0	0	0	0	0	2	2	22	0.8%	
29-Jul	0	0	0	0	0	0		0	0	0	2	0	-2	0	0	0	0	2	2	0	4	0.1%	
30-Jul	2	0	6	4	0	0		0	0	0	0	2	4	6	0	-2	-2	5	1	-1	25	0.9%	
31-Jul	0	0	3	1	0	1		0	1	0	0	1	2	3	0	-4	-4	8	0	-2	10	0.3%	
1-Aug	-2	0	0	-2	0	1		0	1	0	0	1	2	3	0	-2	-1	5	0	-3	3	0.1%	
2-Aug	0	4	-8	4	0	2		0	2	0	0	1	2	3	0	-2	-1	2	0	-4	5	0.2%	
3-Aug	0	2	-4	2	0	1		0	1	2	0	0	0	0	0	0	2	0	2	0	8	0.3%	
4-Aug	0	0	0	0	0	0		0	0	4	0	0	0	0	0	0	0	2	0	0	6	0.2%	
5-Aug	2	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	4	0	0	6	0.2%	
6-Aug	2	0	0	0	-2	0		4	0	0	0	0	0	0	0	0	0	2	0	0	6	0.2%	
7-Aug	1	0	1	0	-1	0		2	0	0	0	0	0	0	0	0	0	0	0	0	3	0.1%	
8-Aug	0	0	2	0	0	0		4	0	0	0	0	0	0	0	0	0	0	0	0	6	0.2%	
9-Aug	0	4	4	2	0	0		20	0	0											30	1.0%	
10-Aug																					0	0.0%	
11-Aug	Flooded out																				0	0.0%	
12-Aug																					0	0.0%	
13-Aug																					0	0.0%	
14-Aug																					0	0.0%	
15-Aug	0	0	0	0	2	0		2	0	0	2	End of the counting season										6	0.2%
	573	443	299	116	57	39		-409	10	15	42	93	120	117	85	70	105	255	483	380	2,893		
	19.8%	15.3%	10.3%	4.0%	2.0%	1.3%		-14.1%	0.3%	0.5%	1.5%	3.2%	4.1%	4.0%	2.9%	2.4%	3.6%	8.8%	16.7%	13.1%			

Table 3. Expanded daily hourly pink salmon migration past the Nome River counting tower, Norton Sound, 1994.

Shaded areas indicate hours not counted. Numbers in shaded areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	600-110	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
24-Jun	Start of the counting season							0	0	0	0	0	0	2	-2	0	0	0	0	0	0	0.0%
25-Jun	0	0	-8	0	0	0	0	0	0	0	0	0	1	2	3	1	0	0	0	-1	0.0%	
26-Jun	0	0	-4	0	0	0	0	0	0	0	0	0	2	4	4	4	0	0	0	10	0.0%	
27-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
28-Jun	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.0%	
29-Jun	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.0%	
30-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
1-Jul	0	2	4	0	-2	0	0	0	0	0	0	0	14	-2	0	0	14	4	-18	16	0.0%	
2-Jul	0	0	-2	0	0	-16	0	2	0	6	0	0	0	0	0	0	4	0	0	-6	0.0%	
3-Jul	-2	0	-2	2	2	0	0	0	0	0	0	0	0	0	4	-6	0	0	6	4	0.0%	
4-Jul	0	6	18	12	14	4	2	0	0	0	0	0	16	0	0	20	2	0	32	126	0.1%	
5-Jul	36	2	-2	2	0	-4	1	0	0	0	0	0	0	0	0	0	0	4	4	43	0.0%	
6-Jul	6	-2	24	-2	-6	0	0	0	0	0	0	0	0	0	-2	0	-8	10	-2	18	0.0%	
7-Jul	0	0	10	0	-6	0	0	0	0	0	0	0	0	0	0	0	2	12	-2	16	0.0%	
8-Jul	4	20	84	56	16	-4	0	0	4	0	0	0	0	0	0	0	2	0	0	182	0.1%	
9-Jul	166	122	60	62	16	10	1	0	0	0	0	0	0	98	103	24	28	102	226	1,018	0.7%	
10-Jul	336	237	37	51	28	13	1	6	6	0	2	2	0	196	206	48	54	204	452	1,879	1.3%	
11-Jul	506	352	14	40	40	16	6	12	12	0	4	4	0	16	62	830	2,024	2,268	2,218	8,424	6.0%	
12-Jul	1,028	700	106	34	0	-14	4	2	0	4	2	0	4	4	0	16	239	1,414	2,292	5,835	4.1%	
13-Jul	1,222	2,990	1,400	376	-86	550	11	8	0	0	10	6	30	218	632	704	1,854	3,114	2,640	15,679	11.1%	
14-Jul	4,144	3,524	2,834	-10	-16	-8	19	0	6	0	0	6	0	4	14	590	2,524	9,800	3,654	27,085	19.2%	
15-Jul	11,560	2,760	12,260	7,000	458	4,224	-86,099	88	676	1,294	4,630	2,062	2,946	580	3,066	780	9,354	9,906	9,680	-2,775	-2.0%	
16-Jul	6,070	9,156	-132	-360	-566	-1,040	-35,007	-74	18	38	100	954	894	435	1,733	637	5,406	5,460	5,150	-1,128	-0.8%	
17-Jul	3,417	4,304	-366	-369	-386	-1,676	-11,837	-14	41	84	821	951	374	290	400	494	1,457	1,014	620	-381	-0.3%	
18-Jul	764	-548	-600	-378	-206	-2,312	-8,068	46	64	130	1,542	948	350	222	290	178	638	1,154	5,526	-260	-0.2%	
19-Jul	9,652	10,872	5,922	1,008	332	508	-42,938	6	12	122	2,420	1,476	846	878	398	620	2,384	3,834	264	-1,384	-1.0%	
20-Jul	620	26	32	-76	-50	-34	2,060	-52	-38	22	24	2	48	498	-36	-378	-64	-46	-2,492	66	0.0%	
21-Jul	-1,686	-1,406	-1,166	-666	-1,146	-1,772	3,356	0	-2	4	6	44	1,372	678	798	850	306	358	180	108	0.1%	
22-Jul	2,556	2,840	330	-60	-34	-8	-655	0	-6	16	1,782	1,956	2,344	230	418	2	38	192	882	12,823	9.1%	
23-Jul	288	480	198	-276	-120	-18	-374	80	92	100	330	718	1,500	432	962	1,213	392	468	848	7,313	5.2%	

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Table 3. (Page 2 of 2).

Shaded areas indicate hours not counted. Numbers in shaded areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	600-110	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
24-Jul	636	885	81	-135	-102	11	-532	46	64	158	301	1,300	841	634	1,506	2,424	746	744	814	10,422	7.4%	
25-Jul	984	1,290	-36	6	-84	40	-1,066	12	36	216	272	1,882	182	290	1,732	1,708	1,456	4,940	7,004	20,864	14.8%	
26-Jul	2,950	1,384	1,008	6	454	108	-671	6	4	-16	48	60	84	266	792	824	1,044	940	3,834	13,125	9.3%	
27-Jul	3,232	2,900	456	44	22	120	-560	0	94	66	74	160	210	240	320	692	1,486	460	942	10,958	7.8%	
28-Jul	1,020	100	-2	0	18	-54	-118	0	6	20	120	84	100	72	88	300	106	90	356	2,306	1.6%	
29-Jul	92	-104	-50	-8	-20	-32	-87	16	28	14	72	72	234	196	172	102	354	340	310	1,701	1.2%	
30-Jul	96	40	46	0	12	-6	-379	60	70	66	144	330	410	92	114	-1	82	125	318	1,619	1.1%	
31-Jul	28	20	26	5	6		-132	26	35	58	83	207	216	-12	56	-104	-190	-90	326	564	0.4%	
1-Aug	-40	0	6	10	0		-116	26	35	58	83	207	216	36	51	3	-133	-61	117	498	0.4%	
2-Aug	-48	-12	-8	14	0	-44	-66	-8	0	58	83	207	216	36	51	3	-76	-32	-92	282	0.2%	
3-Aug	20	23	3	21	9	-11	-149	11	16	58	22	84	22	84	46	110	80	90	98	637	0.5%	
4-Aug	88	58	14	28	18	22	-197	30	32	50	52	26	104	126	112	60	132	68	20	843	0.6%	
5-Aug	54	28	30	-8	16	12	-152	24	60	40	26	62	80	74	54	106	50	46	50	652	0.5%	
6-Aug	44	4	26	14	14	8	139	4	-2	12	16	40	14	37	27	79	34	42	60	612	0.4%	
7-Aug	42	25	16	17	13	9	124	12	5	22	23	34	24	0	0	52	18	38	70	544	0.4%	
8-Aug	40	46	6	20	12	10	184	20	12	32	30	28	34	38	20	18	42	96	120	808	0.6%	
9-Aug	28	16	10	8	-6	-12	15	2	6												67	0.0%
10-Aug																					0	0.0%
11-Aug	Flooded out																				0	0.0%
12-Aug																					0	0.0%
13-Aug																					0	0.0%
14-Aug																					0	0.0%
15-Aug	-2	0	2	4	4	0	16	2	2	-2	End of the counting season										26	0.0%
	49,951	43,140	22,685	6,494	-1,328	-1,400	-183,262	399	1,388	2,730	13,122	13,912	13,728	6,992	14,198	13,001	31,881	47,108	46,507	141,246		
	35.4%	30.5%	16.1%	4.6%	-0.9%	-1.0%	-129.7%	0.3%	1.0%	1.9%	9.3%	9.8%	9.7%	5.0%	10.1%	9.2%	22.6%	33.4%	32.9%			

Table 4. Expanded daily hourly king salmon migration past the Nome River counting tower, Norton Sound, 1994.

Shaded areas indicate hours not counted. Numbers in shaded areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600-1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
24-Jun	Start of the counting season							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
25-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
26-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
27-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
28-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
29-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
30-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
1-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
2-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
3-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
4-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3.7%	
5-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
6-Jul	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	3.7%	
7-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
8-Jul	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	-2	-3.7%	
9-Jul	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3.7%	
10-Jul	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.9%	
11-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	4	8	14.8%	
12-Jul	2	0	0	0	0	0	0	0	0	0	0	0	0	-2	0	2	0	0	0	2	3.7%	
13-Jul	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	4	7.4%	
14-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4	7.4%	
15-Jul	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	2	0	0	2	2.8%	
16-Jul	0	0	0	-4	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	-2	-4.2%	
17-Jul	0	0	0	-2	0	-1	1	0	0	0	0	0	0	0	0	0	0	0	0	-2	-4.2%	
18-Jul	0	0	0	0	0	-2	-2	0	0	0	0	0	0	0	0	2	0	2	6	6	11.1%	
19-Jul	0	0	0	0	0	0	-1	0	0	0	0	0	2	0	0	0	0	2	0	3	5.6%	
20-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
21-Jul	0	0	0	0	0	0	-1	0	0	0	0	0	2	0	0	2	0	0	0	3	5.6%	
22-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	3.7%	
23-Jul	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	7	13.0%	

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Table 4. (Page 2 of 2).

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600-1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total
24-Jul	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	6	0	0	0	9	16.7%
25-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
26-Jul	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3.7%
27-Jul	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3.7%
28-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
29-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
30-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
31-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
1-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
2-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
3-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
4-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
5-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
6-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
7-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
8-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
9-Aug	0	0	0	0	0	0	0	0	0											0	0.0%
10-Aug																				0	0.0%
11-Aug	Flooded out																			0	0.0%
12-Aug																				0	0.0%
13-Aug																				0	0.0%
14-Aug																				0	0.0%
15-Aug	0	0	0	0	0	0	0	0	0	End of the counting season										0	0.0%
	6	8	0	-6	0	-3	-3	0	0	0	-2	2	4	-2	10	17	5	8	10	54	
	11.1%	14.8%	0.0%	-11.1%	0.0%	-5.6%	-5.6%	0.0%	0.0%	0.0%	-3.7%	3.7%	7.4%	-3.7%	18.5%	31.5%	9.3%	14.8%	18.5%		

Table 5. Expanded daily hourly coho salmon migration past the Nome River counting tower, Norton Sound, 1994.

Shaded areas indicate hours not counted. Numbers in shaded areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600-1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
24-Jun	Start of the counting season							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
25-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
26-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
27-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
28-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
29-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
30-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
1-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
2-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
3-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
4-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
5-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
6-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
7-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
8-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
9-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
10-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
11-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
12-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
13-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
14-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
15-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
16-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
17-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
18-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
19-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
20-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
21-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
22-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
23-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	2	5	0.7%	

- continued -

Table 5. (Page 2 of 2).

Shaded areas indicate hours not counted. Numbers in shaded areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600-1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
24-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	4	10	1.4%	
25-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0.3%	
26-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	8	6	0	4	0	34	52	7.2%	
27-Jul	16	20	18	0	0	0	0	0	2	0	2	0	4	4	2	0	6	0	8	82	11.3%	
28-Jul	0	0	-2	0	0	0	0	0	0	2	2	6	4	0	2	0	0	0	0	14	1.9%	
29-Jul	0	0	0	0	0	0	0	0	0	0	0	0	8	2	0	4	0	2	0	16	2.2%	
30-Jul	0	0	6	0	0	2	20	0	2	0	0	0	0	1	5	1	2	1	0	40	5.5%	
31-Jul	4	0	3	0	0	2	26	0	1	0	1	1	2	0	10	-2	4	0	0	52	7.2%	
1-Aug	8	0	0	0	0	2	17	0	1	0	1	1	2	0	5	-1	0	1	-3	34	4.7%	
2-Aug	0	0	0	0	0	2	2	0	0	0	1	1	2	0	5	-1	-4	2	-6	4	0.6%	
3-Aug	3	2	0	1	0	1	19	0	0	0	2	2	4	0	0	0	2	4	-2	38	5.2%	
4-Aug	6	4	0	2	0	0	26	0	0	0	0	0	0	0	0	0	10	2	2	52	7.2%	
5-Aug	0	0	0	0	0	0	10	0	0	0	2	2	0	0	4	0	2	2	-2	20	2.8%	
6-Aug	10	0	0	4	0	2	8	0	0	0	4	0	0	0	2	1	7	5	2	45	6.2%	
7-Aug	5	3	2	2	0	1	10	0	0	0	2	1	0	0	0	2	12	8	6	54	7.4%	
8-Aug	0	6	4	0	0	0	16	0	0	0	0	2	0	12	12	4	4	18	10	88	12.1%	
9-Aug	30	16	14	2	0	0	14	0	0											76	10.4%	
10-Aug																				0	0.0%	
11-Aug	Flooded out																			0	0.0%	
12-Aug																				0	0.0%	
13-Aug																				0	0.0%	
14-Aug																				0	0.0%	
15-Aug	2	8	2	4	0	0	22	4	0	0	End of the counting season										42	5.8%
	84	59	47	15	0	12	190	4	6	2	17	16	26	36	53	8	49	45	57	726		
	11.6%	8.1%	6.5%	2.1%	0.0%	1.7%	26.1%	0.6%	0.8%	0.3%	2.3%	2.2%	3.6%	5.0%	7.3%	1.1%	6.8%	6.2%	7.9%			

Table 6. Expanded daily hourly Dolly Varden migration past the Nome River counting tower, Norton Sound, 1994.

Shaded areas indicate hours not counted. Numbers in shaded areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600-1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total			
24-Jun	Start of the counting season										0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
25-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
26-Jun	0	0	2	0	0	-7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-5	-2.9%		
27-Jun	0	0	4	0	0	-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-10	-5.9%		
28-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
29-Jun	0	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	-1.2%		
30-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	2.4%		
1-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	1.2%		
2-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
3-Jul	0	4	-2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	8	4.7%		
4-Jul	0	2	0	0	0	0	0	0	0	0	0	0	4	4	2	10	0	0	0	0	22	12.9%		
5-Jul	12	14	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	18.8%		
6-Jul	4	2	4	0	-4	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	8	4.7%		
7-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
8-Jul	0	0	6	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	8.2%		
9-Jul	10	4	4	4	-2	0	0	0	0	0	0	0	0	8	4	2	0	0	0	0	34	20.0%		
10-Jul	5	2	2	4	-1	0	0	0	0	0	0	0	0	16	8	4	0	0	0	0	40	23.5%		
11-Jul	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	12	7.1%		
12-Jul	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	0	0	0	0	0	-2	-1.2%		
13-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
14-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
15-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
16-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
17-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
18-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
19-Jul	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2.4%		
20-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
21-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
22-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%		
23-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	3	1.8%			

- continued -

Table 6. (Page 2 of 2).

Shaded areas indicate hours not counted. Numbers in shaded areas indicate estimated passage.

Date	0000	0100	0200	0300	0400	0500	0600-1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
24-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4	6	3.5%	
25-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
26-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
27-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
28-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
29-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
30-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
31-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
1-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
2-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
3-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
4-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
5-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
6-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
7-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
8-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	
9-Aug	0	0	0	0	0	0	0	0	0											0	0.0%	
10-Aug																				0	0.0%	
11-Aug	Flooded out																			0	0.0%	
12-Aug																				0	0.0%	
13-Aug																				0	0.0%	
14-Aug																				0	0.0%	
15-Aug	0	0	0	0	0	0	0	0	0	0	End of the counting season										0	0.0%
	31	28	22	26	-7	-19	0	0	0	0	-2	0	4	32	14	18	13	2	8	170		
	18.2%	16.5%	12.9%	15.3%	-4.1%	-11.2%	0.0%	0.0%	0.0%	0.0%	-1.2%	0.0%	2.4%	18.8%	8.2%	10.6%	7.6%	1.2%	4.7%			

Table 12. Age and sex composition of chum salmon samples, Nome River, Norton Sound, 1994.^a

Stratum Date: 7/26 - 8/05/94

Sampling Date: 7/26 - 8/05/94

Sample Size: 99

		Brood Year and Age Group			Total
		1990 (0.3)	1989 (0.4)	1988 (0.5)	
Female	Percent of Sample	35.4%	16.2%	1.0%	52.6%
	# in Escapement	1,024	469	29	1,522
	Mean Length (mm) ^b	570	589	625	
Male	Percent of Sample	28.2%	19.2%	0.0%	47.4%
	# in Escapement	816	556	0	1,371
	Mean Length (mm) ^b	577	598		
Total chum	Percent of Sample	63.7%	35.4%	1.0%	100.0%
	# in Escapement	1,843	1,024	29	2,893

^a From 26 July to 5 August 1994, 99 chum salmon were sampled in conjunction with eggtakes for the Nome River salmon restoration project

^b Length was from mid-eye to fork-of-tail.

Table 13. Nome River counting tower climatological and stream observations, Norton Sound 1994.

Date	Time	Air Temp °C	Water Temp °C	% Cloud Cover	Water Guage	Water Visibility	Remarks
25-Jun	0500			30%		Clear	
26-Jun	1500	15	11	25%	30.50	Clear	Moderate wind
27-Jun	1200	15	9	50%	30.20	Clear	Light wind
28-Jun	1200	10	9	100%	30.00	Moderate	Windy
29-Jun	1200	13	8	98%	29.75	Moderate	
30-Jun	1200	10	7	100%	29.50	Moderate	
1-Jul	1200	12	10	90%	29.40	Moderate	Drizzle
2-Jul	1200	11	10	100%	29.50	Moderate	Drizzle
3-Jul	1200	10	8	100%	28.50	Moderate	Raining
4-Jul	1200	11	9	95%	28.30	Clear	
5-Jul	1200	12	8	100%	28.75	Moderate	Raining
6-Jul	1230	12	9	50%	28.75	Clear	West wind 10 mph
7-Jul	1200	10	7	100%	30.00	Moderate/poor	Rain and wind
8-Jul	1200	10	7	100%	29.50	Moderate	Steady rain
9-Jul	1200	13	8	60%	28.00	Clear	
10-Jul	2100	7	7	100%	31.00	Moderate/poor	Raining
11-Jul	1200	10	8	90%	31.50	Moderate	
12-Jul	1200	12	8	97%	29.00	Moderate	
13-Jul	1200	17	10	50%	28.00	Clear	
14-Jul	1200	16	10	10%	27.50	Clear	Windy
15-Jul	1200	16	11	88%	27.00	Moderate	Light wind
16-Jul	1200	23	13	5%	26.75	Clear	
17-Jul	2430	12	15	60%	27.00	Clear	
18-Jul	1200	22	12	15%	27.50	Clear	
19-Jul	1200	18	13	100%	26.50	Clear Rough	15 - 20 mph wind
20-Jul	1200	13	11	100%	26.25	Clear	
21-Jul	1200	23	11	60%	26.00	Clear	
22-Jul	1200	13	10	100%	26.00	Clear	Drizzle
23-Jul	1200	10	9	100%	29.25	Rough	Rain and mud
24-Jul	1800	15	13	68%	30.25	Moderate	
25-Jul	1200	15	10	95%	29.00	Moderate	
26-Jul	1200	22	12	10%	28.00	Clear	
27-Jul	1200	30	15	10%	27.00	Clear	Breeze
28-Jul	1200	15	13	100%	27.00	Moderate	Wind and drizzle
29-Jul	1200	13	11	97%	27.50	Clear	
30-Jul	1200	15	13	100%	27.50	Moderate	Wind and showers
31-Jul	1800	19	13	96%	36.00	Poor	Windy & muddy water
1-Aug	1230	13	10	100%	52.00	Very poor	Very windy & muddy water
2-Aug	1200	10	9	100%	45.00	Very poor	Very windy, rain & muddy water
3-Aug	1230	13	10	100%	41.00	Poor	Muddy water
4-Aug	1200	20	13	90%	36.50	Moderate	Water clearing

- continued -

Table 13. (Page 2 of 2).

Date	Time	Air Temp °C	Water Temp °C	% Cloud Cover	Water Guage	Water Visibility	Remarks
5-Aug	1200	20	12	80%	35.00	Moderate	
6-Aug	1200	20	12	80%	34.00	Moderate	
7-Aug	1800	12	11	100%	36.00	Moderate	Wind, drizzle
8-Aug	1200	11	10	100%	37.50	Moderate	
9-Aug	1200	13	10	100%	41.00	Poor	Wind, rain, dirty water
10-Aug							
11-Aug							
12-Aug	1030	9	7	100%	62.00	Very poor	Raining
13-Aug							
14-Aug							
15-Aug	1300	10	8	100%	56.00	Moderate	Drizzle and wind

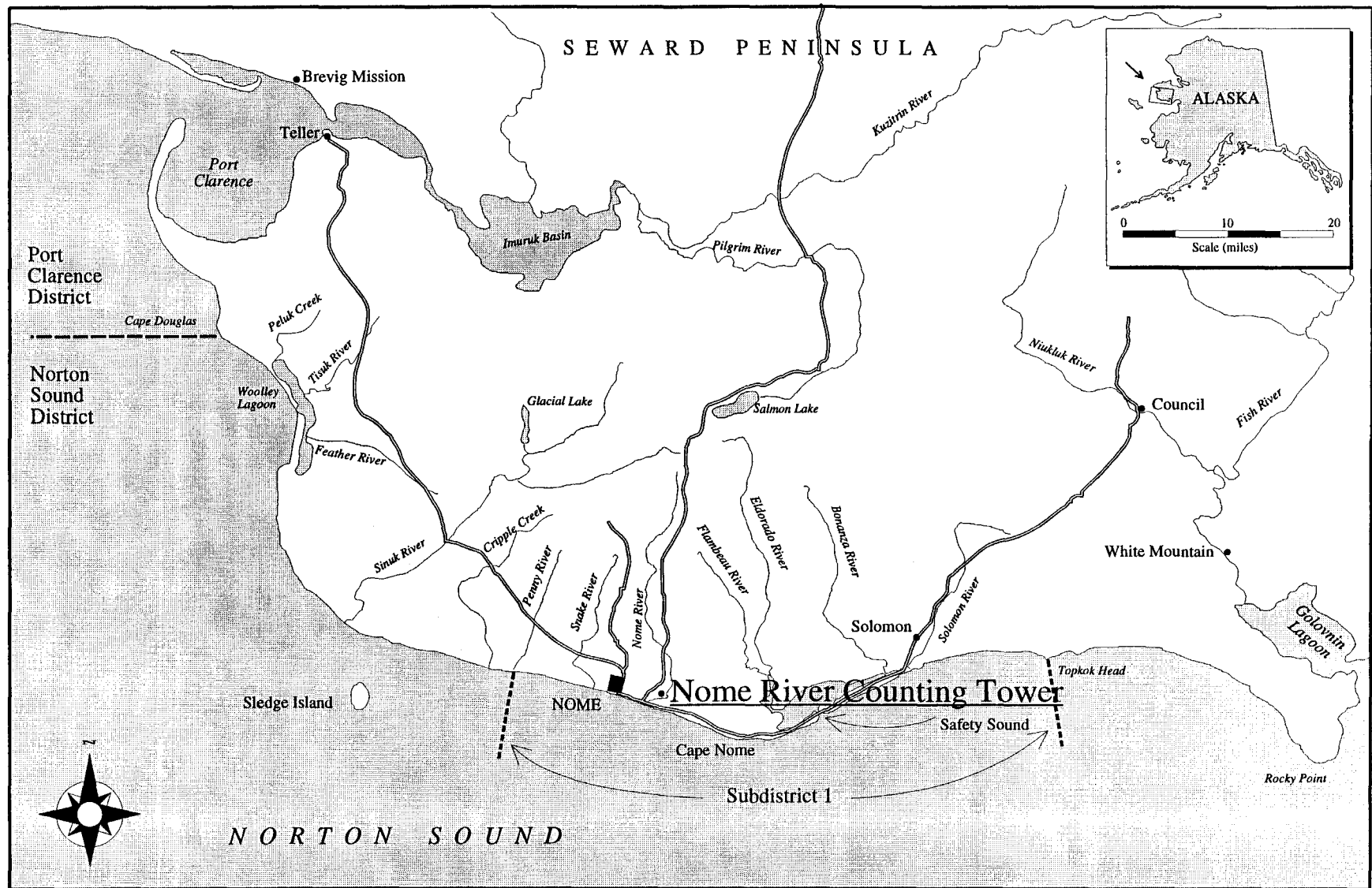


Figure 1. Area Location map of the Nome River counting tower project site , Norton Sound , 1994

Figure 2. Nome River tower cumulative salmon passage, Norton Sound 1994.^a

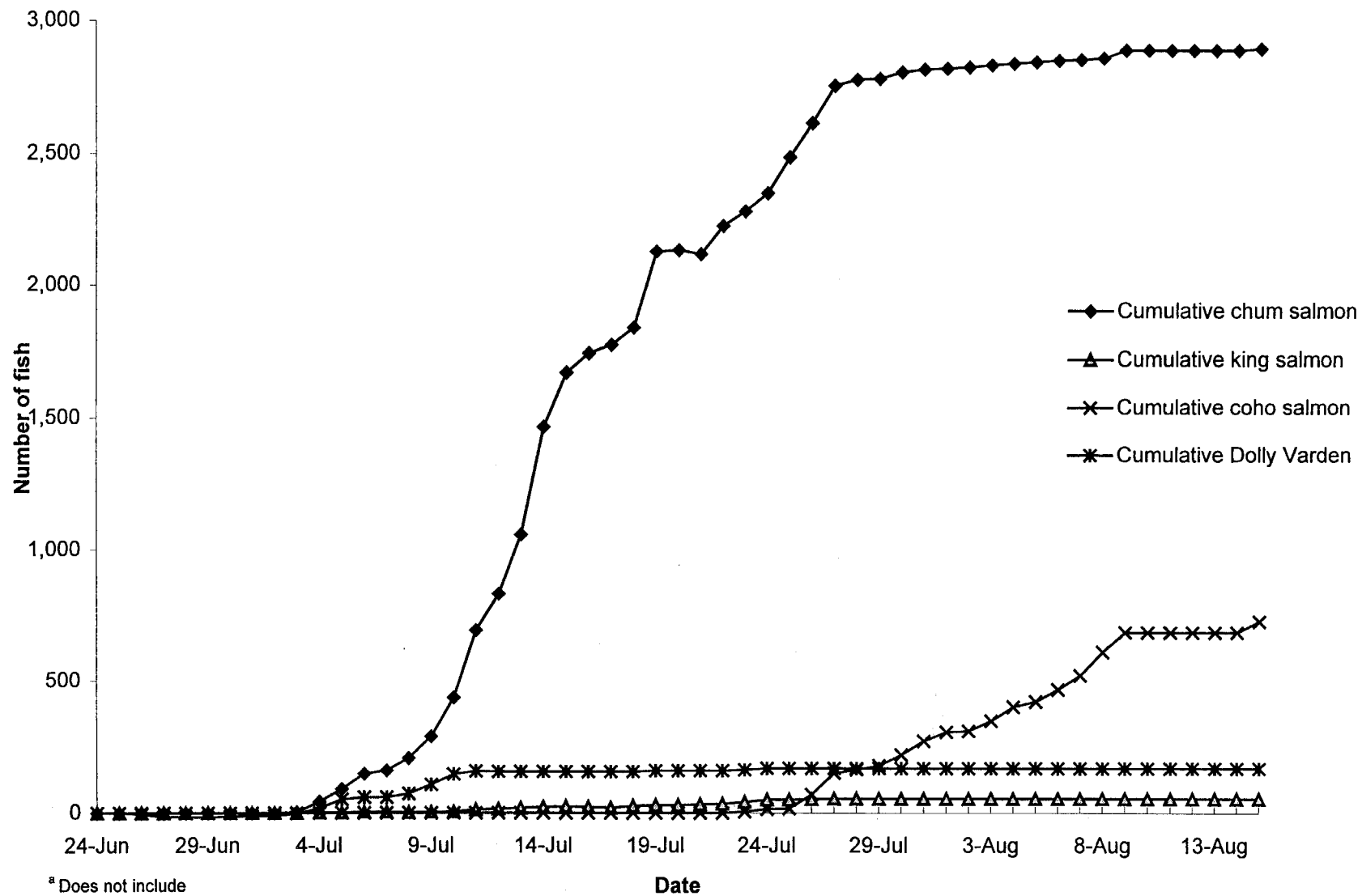


Figure 3. Daily chum salmon migration past the Nome River counting tower, Norton Sound, 1994.

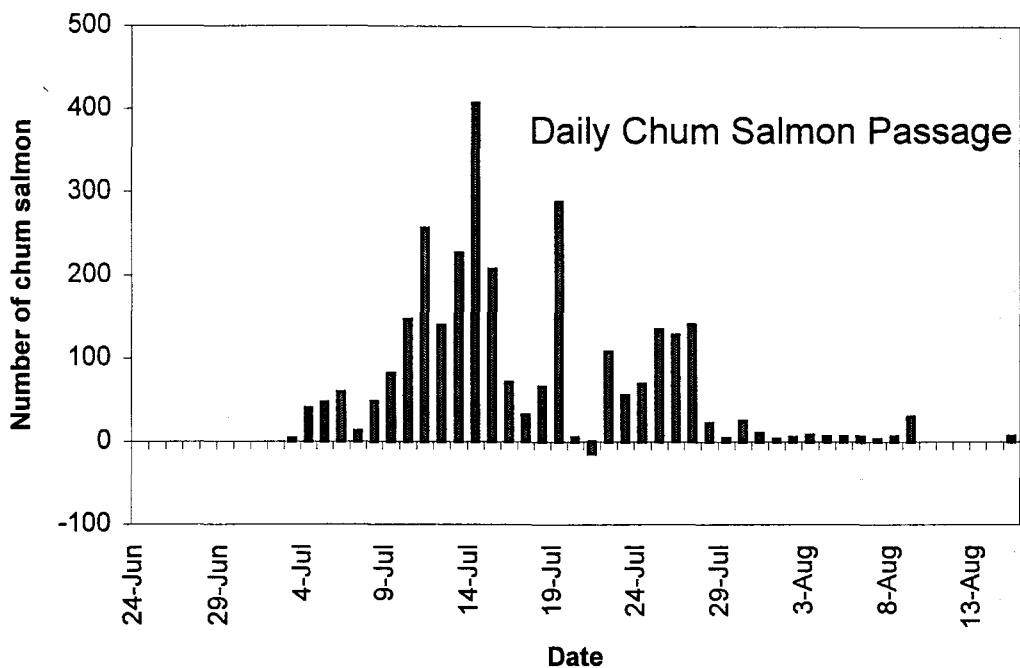


Figure 4. Cumulative chum salmon migration past the Nome River counting tower, Norton Sound, 1994.

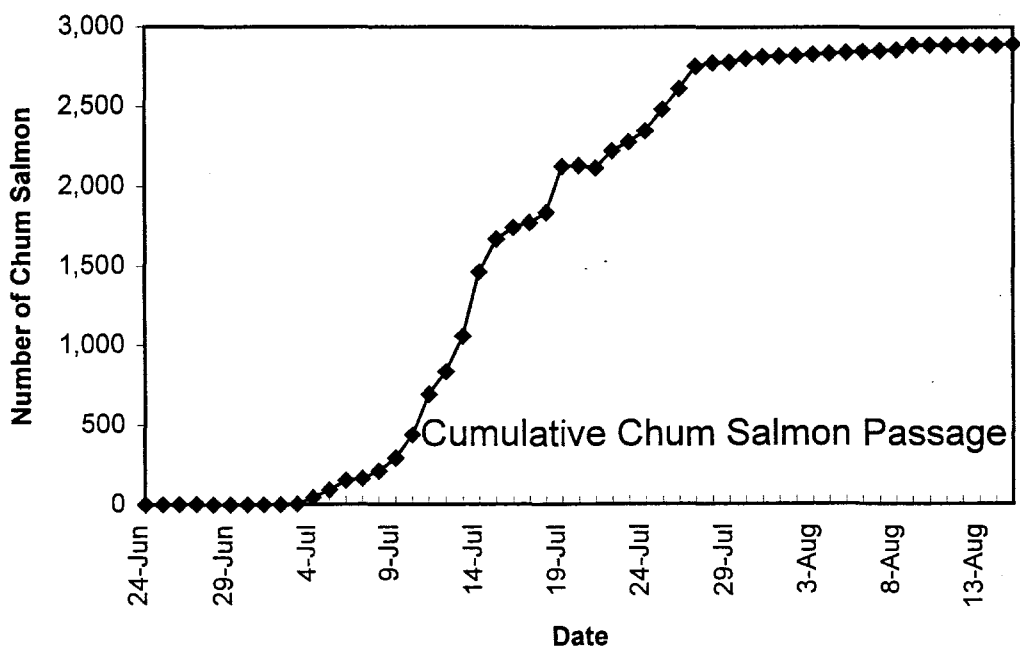


Figure 5. Daily pink salmon migration past the Nome River counting tower, Norton Sound, 1994.

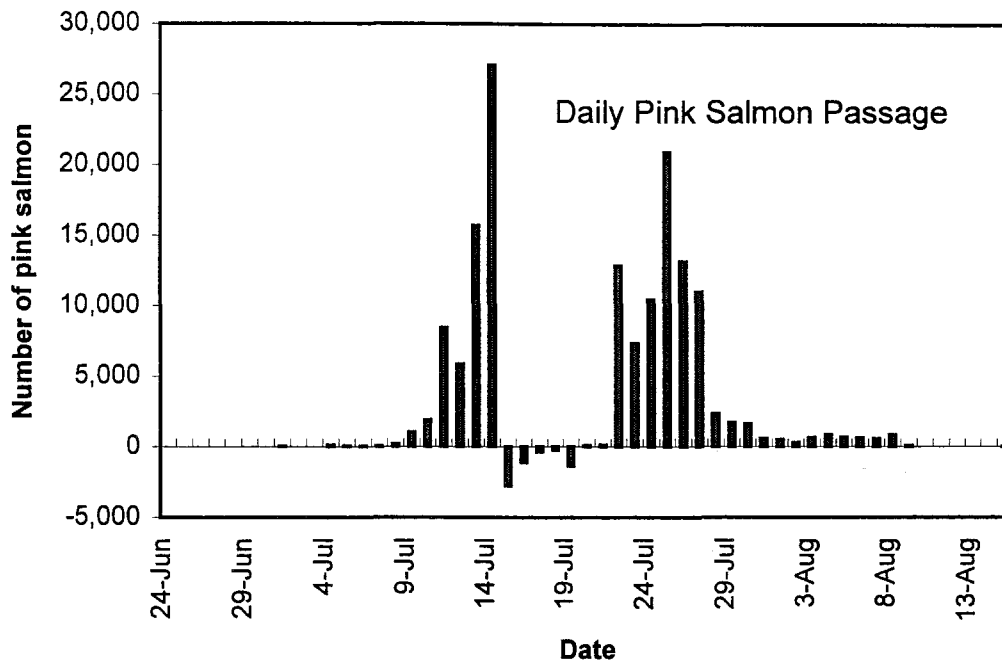


Figure 6. Cumulative pink salmon migration past the Nome River counting tower, Norton Sound, 1994.

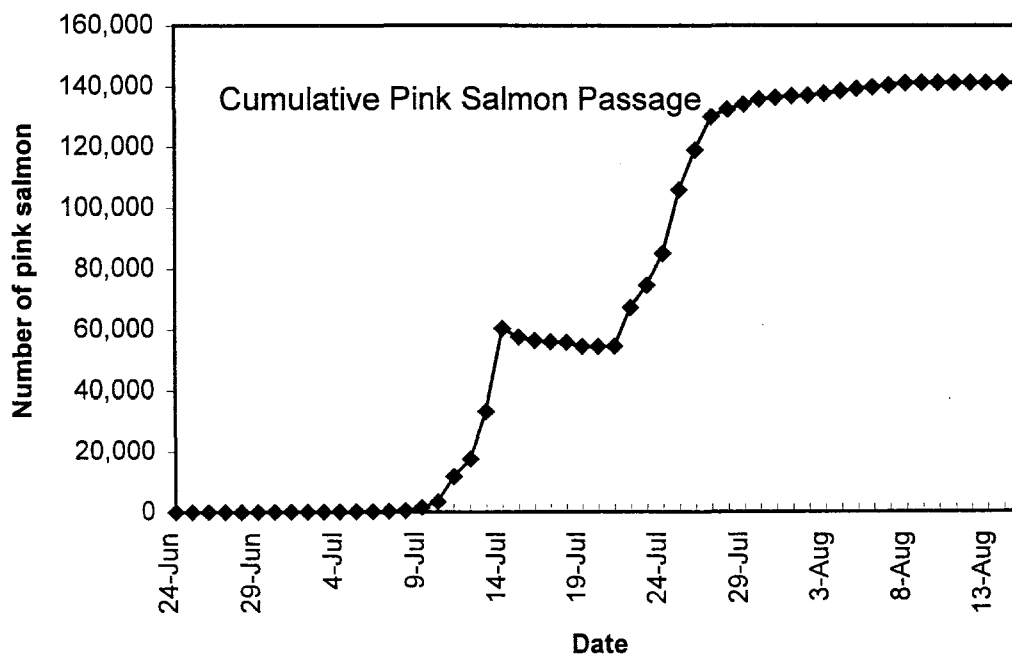


Figure 7. Daily king salmon migration past the Nome River counting tower, Norton Sound, 1994.

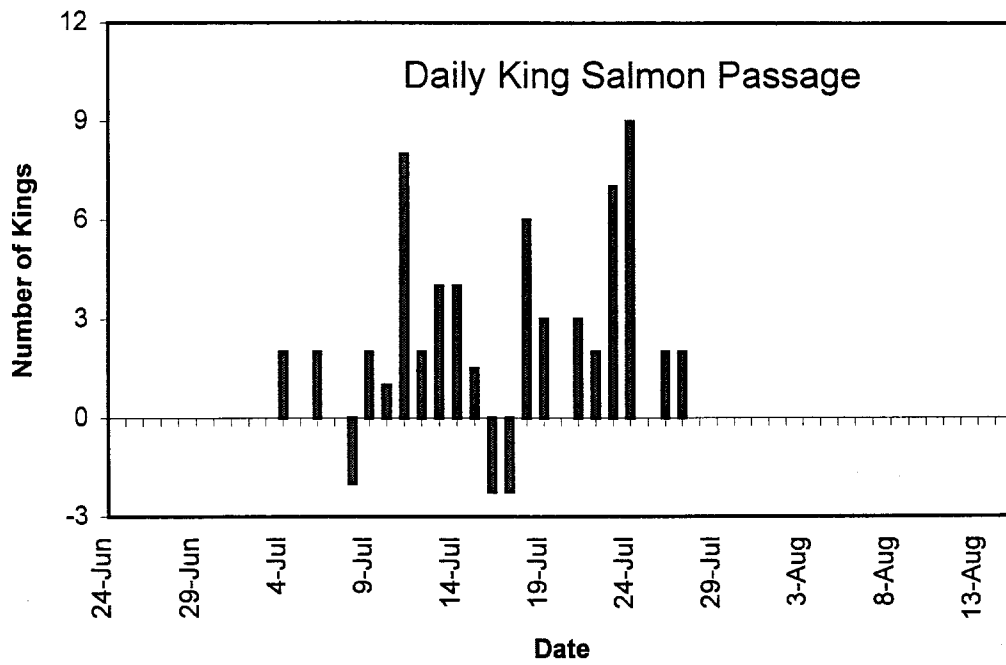


Figure 8. Cumulative king salmon migration past the Nome River counting tower, Norton Sound, 1994.

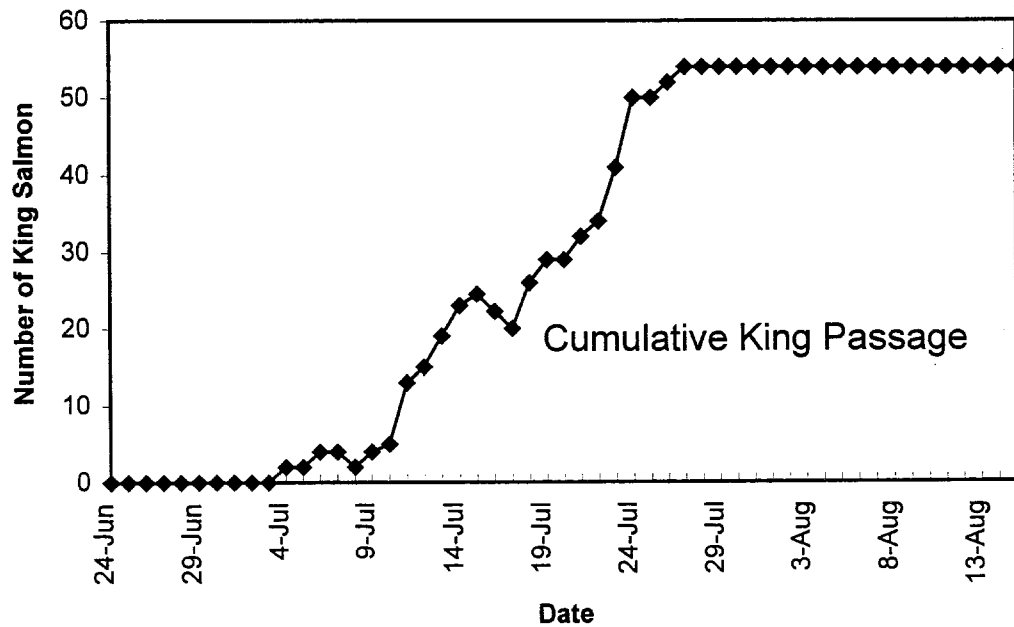


Figure 9. Daily coho salmon migration past the Nome River Counting Tower, Norton Sound, 1994.

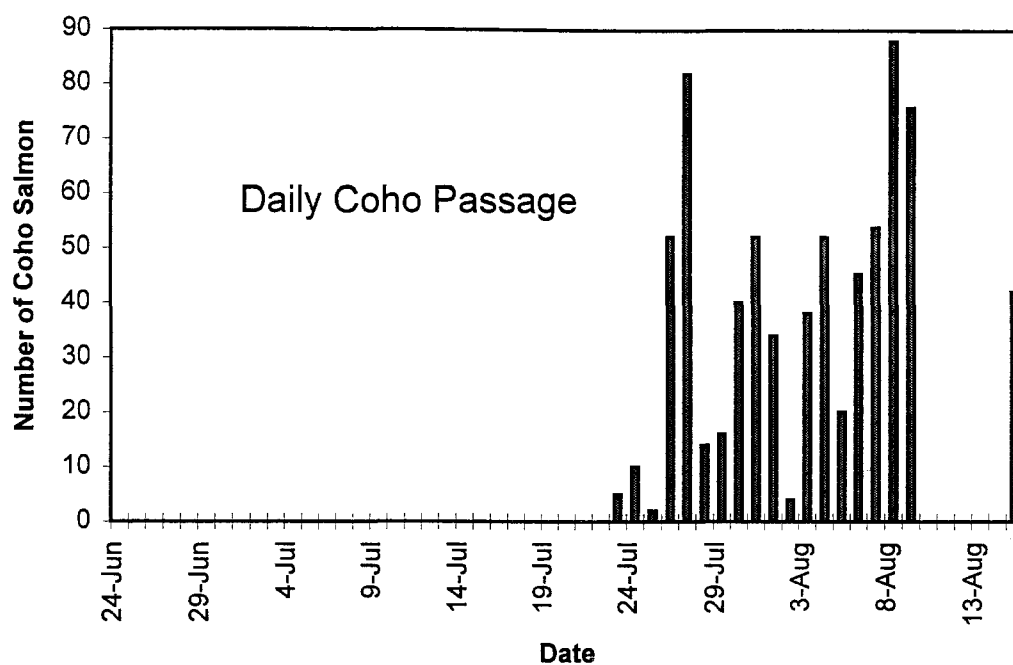


Figure 10. Cumulative coho salmon migration past the Nome River counting tower, Norton Sound, 1994.

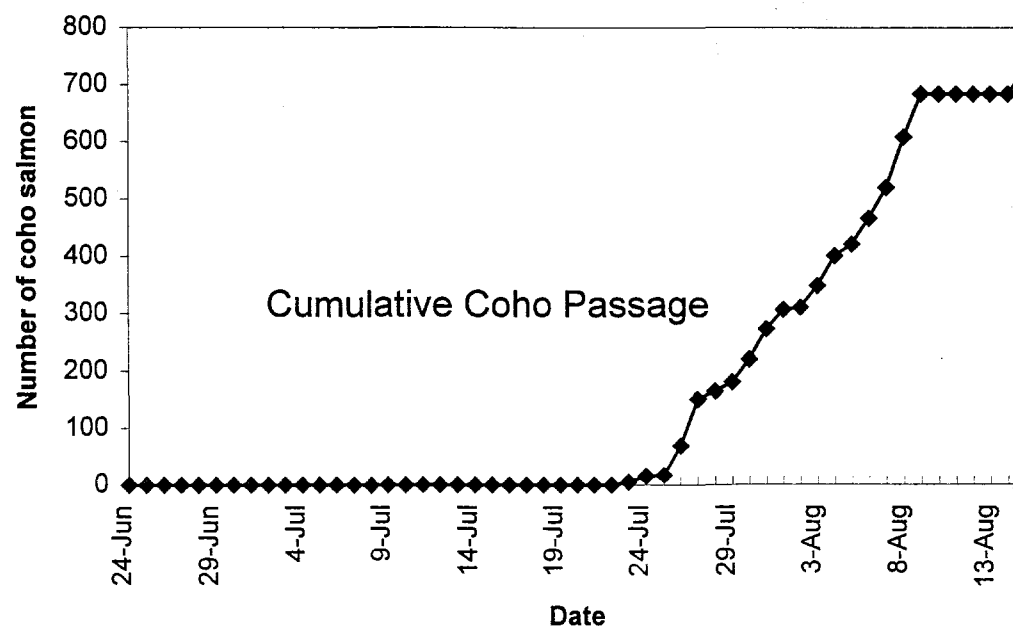


Figure 11. Daily Dolly Varden migration past the Nome River counting tower, Norton Sound, 1994.

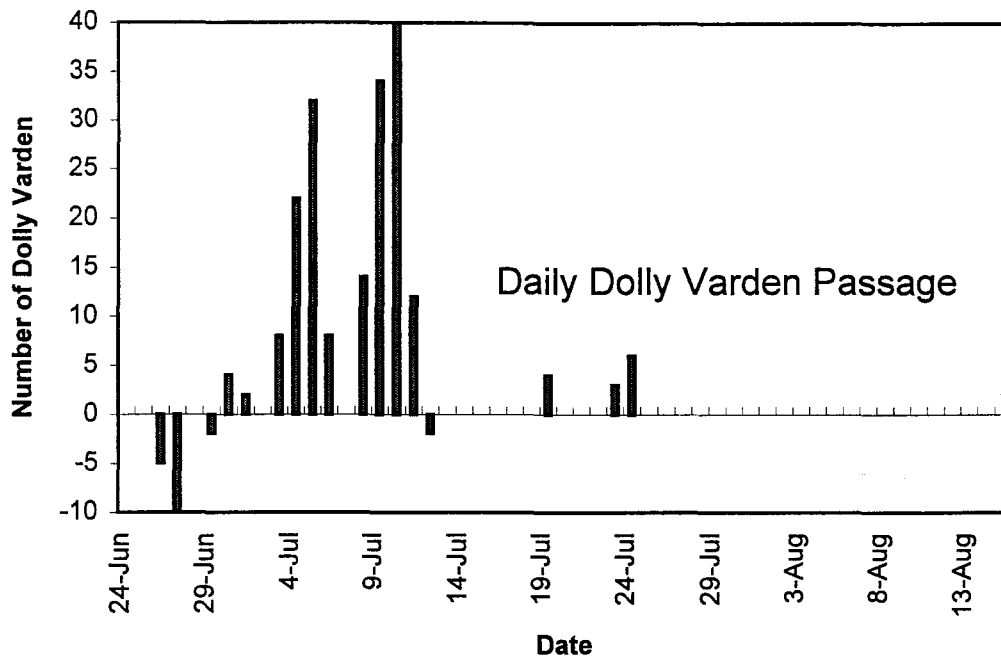


Figure 12. Cumulative Dolly Varden migration past the Nome River counting tower, Norton Sound, 1994.

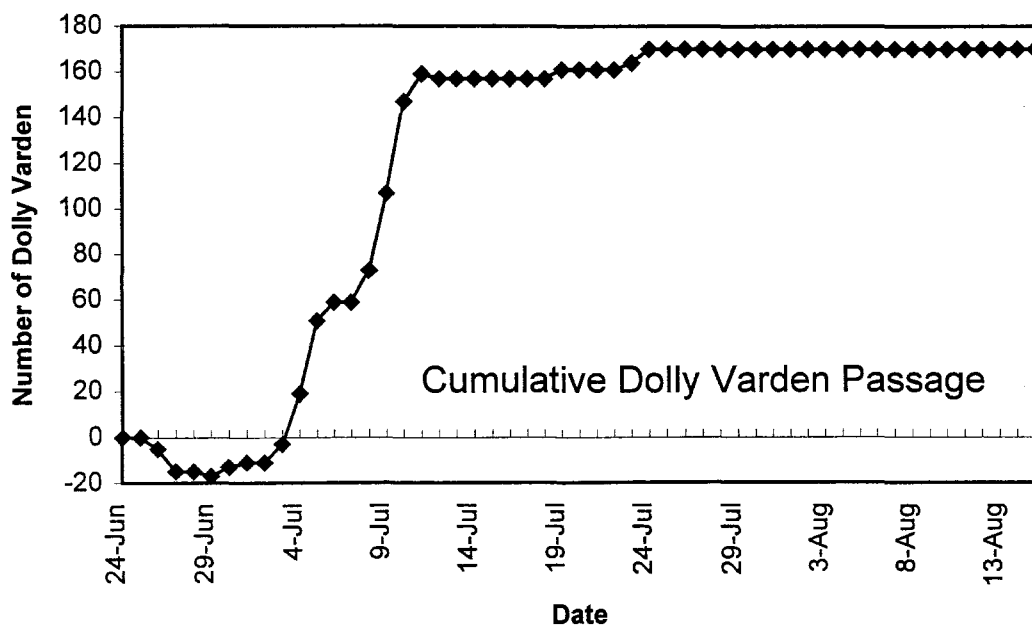


Figure 13. Diurnal pattern of chum salmon migration past the Nome River counting tower, Norton Sound, 1994.

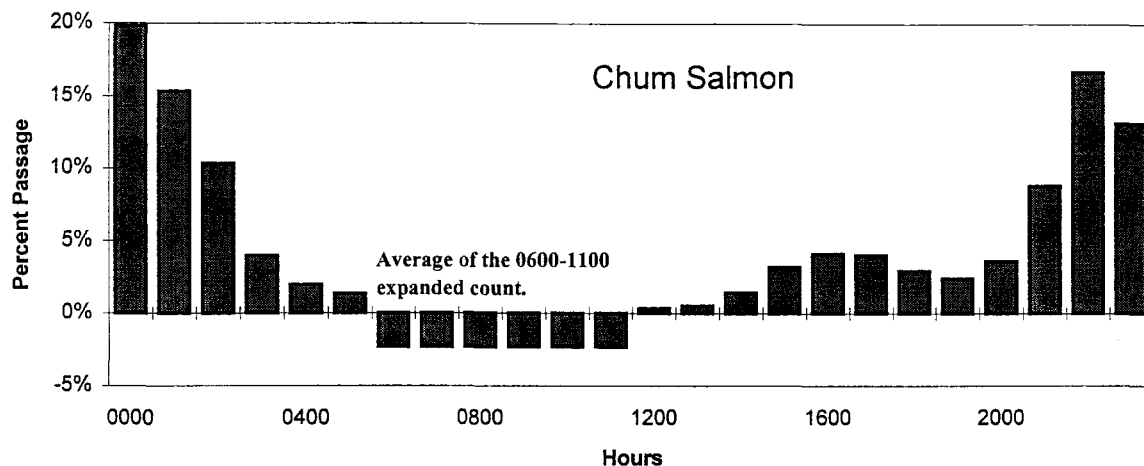


Figure 14. Diurnal pattern of pink salmon migration past the Nome River counting tower, Norton Sound, 1994.

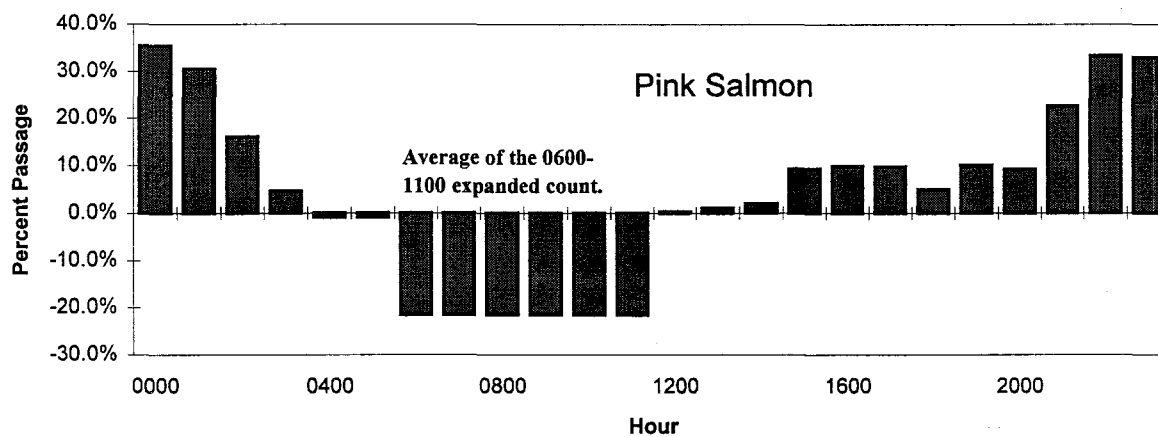


Figure 15. Diurnal pattern of king salmon migration past the Nome River counting tower, Norton Sound, 1994.

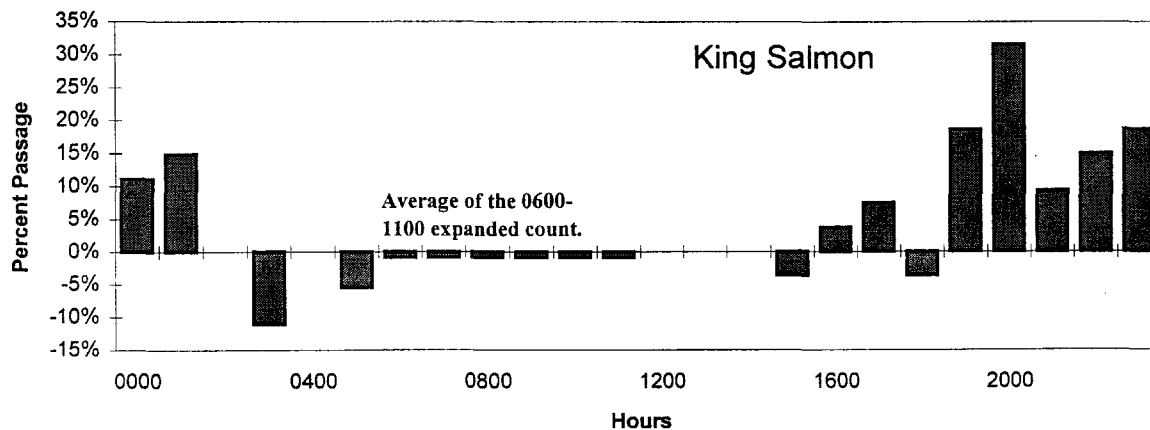


Figure 16. Diurnal pattern of coho salmon migration past the Nome River counting tower, Norton Sound, 1994.

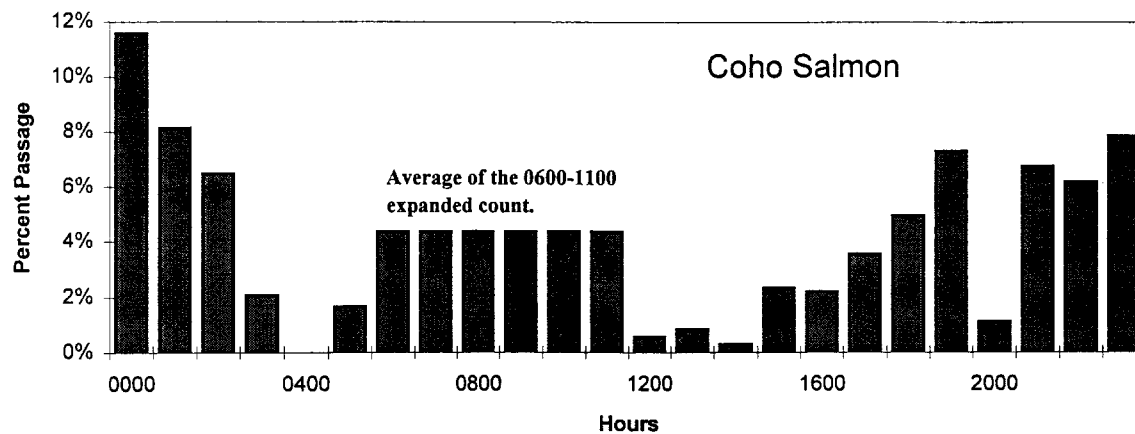
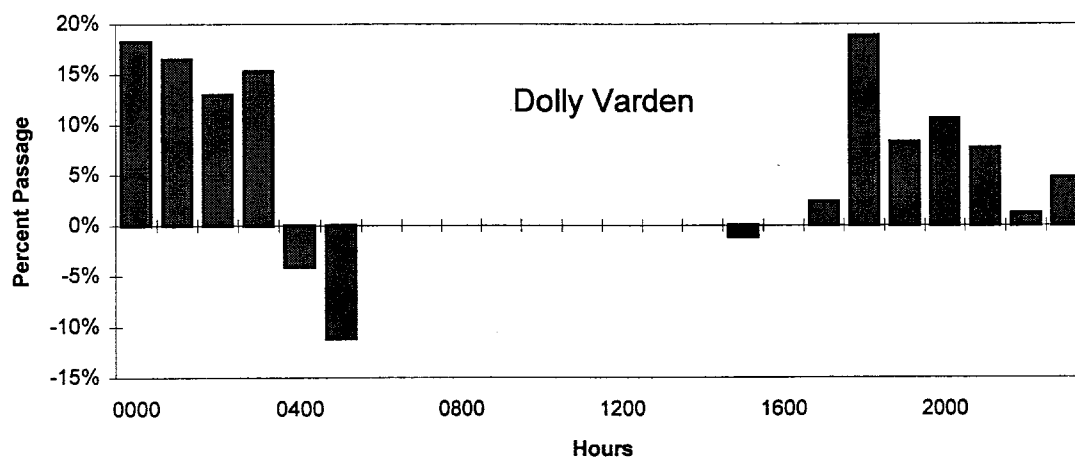


Figure 17. Diurnal pattern of Dolly Varden migration past the Nome River counting tower, Norton Sound, 1994.



Appendix Table 1. Reported hourly chum salmon observations at the Nome River counting tower, Norton Sound, 1994.

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total						
24-Jun	Start of the counting season												0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25-Jun	0	0	0	0	0	0																			0	0	0.00%					
26-Jun													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	
27-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%					
28-Jun	0	0	0	0	0	0																			0	0	0.00%					
29-Jun	0	0	0	0	0	0																			0	0	0.00%					
30-Jun	0	0	0	0	0	0																			0	0	0.00%					
1-Jul	0	0	0	0	0	0																			0	0	0.00%					
2-Jul	0	0	0	0	0	0																			0	0	0.00%					
3-Jul	0	0	0	0	0	0																			0	0	0.00%					
4-Jul	0	4	6	2	4	4	-2	-4	0	0	0	0	0	0	0	0	0	0	4	0	10	0	2	10	40	1.34%						
5-Jul	42	-12	-6	-2	0	-2																			54	1.81%						
6-Jul	4	14	46	-6	0	0																			68	2.28%						
7-Jul	0	0	8	6	0	0																			14	0.47%						
8-Jul	2	4	20	10	8	4																			48	1.61%						
9-Jul	6	16	6	6	6	2																			42	1.41%						
10-Jul																			16	4	0	4	10	46	80	2.68%						
11-Jul	32	26	12	16	6	-2	-4	0	0	0	2	0	0	2	0	0	0	0	0	4	26	40	64	32	256	8.59%						
12-Jul	42	44	6	4	0	0																			140	4.70%						
13-Jul	22	14	36	10	2	2																			228	7.65%						
14-Jul	38	54	8	-8	0	0																			410	13.76%						
15-Jul	102	14	46	30	4	6																			338	11.34%						
16-Jul	28	36	6	0	0	0																			80	2.68%						
17-Jul																			0	0	2	-4	2	6	6	0.20%						
18-Jul	4	-2	12	-8	-4	-18	-24	-6	-14	2	0	0	0	2	0	12	8	6	14	0	0	4	12	66	66	2.21%						
19-Jul	96	96	50	26	34	30																			472	15.84%						
20-Jul	0	2	2	0	0	0																			8	0.27%						
21-Jul	-6	-12	-4	0	-2	-4																			-24	-0.81%						
22-Jul	26	10	2	0	0	-2																			106	3.56%						
23-Jul	6	6	2	2	0	0																			34	1.14%						

- continued -

Appendix Table 1. (Page 2 of 2).

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total
24-Jul																			2	4	8	6	6	2	28	0.94%
25-Jul	8	12	0	2	-4	6	0	2	0	-2	2	0	2	-2	4	6	12	0	0	10	6	12	8	50	134	4.50%
26-Jul	20	16	8	0	0	4							2	0	0	4	-2	6	2	8	6	2	12	38	126	4.23%
27-Jul	50	36	10	4	2	6							0	0	2	0	4	2	2	4	2	10	4	0	138	4.63%
28-Jul	4	8	0	2	0	4							0	0	0	0	0	0	0	0	0	0	2	2	22	0.74%
29-Jul	0	0	0	0	0	0							0	0	2	0	-2	0	0	0	0	2	2	0	4	0.13%
30-Jul	2	0	6	4	0	0							0	0	0	2	4	6							24	0.81%
31-Jul																			0	-4	-4	8	0	-2	-2	-0.07%
1-Aug	-2	0	0	-2	0																				-4	-0.13%
2-Aug	0	4	-8	4	0	2	-2	0	0	2	0	0	2	0								2	0	-4	2	0.07%
3-Aug																0	0	0	0	0	2	0	2	0	4	0.13%
4-Aug	0	0	0	0	0	0							0	4	0	0	0	0	0	0	0	2	0	0	6	0.20%
5-Aug	2	0	0	0	0	0							0	0	0	0	0	0	0	0	0	4	0	0	6	0.20%
6-Aug	2	0	0	0	-2	0							0	0	0	0	0								0	0.00%
7-Aug																			0	0	0	0	0	0	0	0.00%
8-Aug	0	0	2	0	0	0	-2	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0.20%
9-Aug	0	4	4	2	0	0							0	0											10	0.34%
10-Aug	Flooded out																							0	0.00%	
11-Aug	Flooded out																							0	0.00%	
12-Aug	Flooded out																							0	0.00%	
13-Aug	Flooded out																							0	0.00%	
14-Aug	Flooded out																							0	0.00%	
15-Aug	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	End of the counting season							6	0.20%		
Total	530	394	280	104	56	42	-34	-6	-14	8	4	0	6	12	40	76	100	100	74	66	104	226	464	348	2,980	

Appendix Table 2. Reported hourly pink salmon observations at the Nome River counting tower, Norton Sound, 1994.

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total										
24-Jun	Start of the counting season												0	0	0	0	0	0	2	-2	0	0	0	0	0	0	0	0	0	0	0.0%					
25-Jun	0	0	-8	0	0	0																							-8	0.0%						
26-Jun													0	0	0	0	0	2	4	4	4	0	0	0	14	0.0%										
27-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%									
28-Jun	0	0	0	0	4	0													0	0	0	0	0	0	0	0	0	0	0	4	0.0%					
29-Jun	0	0	0	2	0	0													0	0	0	0	0	0	0	0	0	0	0	0	2	0.0%				
30-Jun	0	0	0	0	0	0													0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%				
1-Jul	0	2	4	0	-2	0													0	0	0	0	14	-2	0	0	14	4	-18	16	0.0%					
2-Jul	0	0	-2	0	0	-16													2	0	6	0	0	0	0	0	4	0	0	-6	0.0%					
3-Jul	-2	0	-2	2	2	0													0	0	0	0	0	0	4	-6	0	0	6	4	0.0%					
4-Jul	0	6	18	12	14	4	2	0	0	0	0	0	0	0	0	0	16	0	0	20	2	0	32	126	0.0%											
5-Jul	36	2	-2	2	0	-4													0	0	0	0	0	0	0	0	0	4	4	42	0.0%					
6-Jul	6	-2	24	-2	-6	0													0	0	0	0	0	0	-2	0	-8	10	-2	18	0.0%					
7-Jul	0	0	10	0	-6	0													0	0	0	0	0	0	0	0	2	12	-2	16	0.0%					
8-Jul	4	20	84	56	16	-4													0	4	0	0	0	0	0	0	2	0	0	182	0.1%					
9-Jul	166	122	60	62	16	10													0	0	0	0	0	0											436	0.2%
10-Jul																									196	206	48	54	204	452	1,160	0.4%				
11-Jul	506	352	14	40	40	16	6	-8	-2	6	4	0	12	12	0	4	4	0	16	62	830	2,024	2,268	2,218	8,424	3.0%										
12-Jul	1,028	700	106	34	0	-14													2	0	4	2	0	4	4	0	16	239	1,414	2,292	5,831	2.1%				
13-Jul	1,222	2,990	1,400	376	-86	550													8	0	0	10	6	30	218	632	704	1,854	3,114	2,640	15,668	5.7%				
14-Jul	4,144	3,524	2,834	-10	-16	-8													0	6	0	0	6	0	4	14	590	2,524	9,800	3,654	27,066	9.8%				
15-Jul	11,560	2,760	12,260	7,000	458	4,224													88	676	1,294	4,630	2,062	2,946	580	3,066	780	9,354	9,906	9,680	83,324	30.1%				
16-Jul	6,070	9,156	-132	-360	-566	-1,040													-74	18	38	100	954	894											15,058	5.4%
17-Jul																									374	290	400	494	1,457	1,014	620	4,649	1.7%			
18-Jul	764	-548	-600	-378	-206	-2,312	-3,808	-3,090	-1,266	-38	56	78	46	64	130	1,542	948	350	222	290	178	638	1,154	5,526	-260	-0.1%										
19-Jul	9,652	10,872	5,922	1,008	332	508													6	12	122	2,420	1,476	846	878	398	620	2,384	3,834	264	41,554	15.0%				
20-Jul	620	26	32	-76	-50	-34													-52	-38	22	24	2	48	498	-36	-378	-64	-46	-2,492	-1,994	-0.7%				
21-Jul	-1,686	-1,406	-1,166	-666	-1,146	-1,772													0	-2	4	6	44	1,372	678	798	850	306	358	180	-3,248	-1.2%				
22-Jul	2,556	2,840	330	-60	-34	-8													0	-6	16	1,782	1,956	2,344	230	418	2	38	192	882	13,478	4.9%				
23-Jul	288	480	198	-276	-120	-18													80	92	100	330	718	1,500											3,372	1.2%

- continued -

Appendix Table 2. (Page 2 of 2).

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
24-Jul																			634	1,506	2,424	746	744	814	6,868	2.5%	
25-Jul	984	1,290	-36	6	-84	40	-958	-230	12	28	16	66	12	36	216	272	1,882	182	290	1,732	1,708	1,456	4,940	7,004	20,864	7.5%	
26-Jul	2,950	1,384	1,008	6	454	108							6	4	-16	48	60	84	266	792	824	1,044	940	3,834	13,796	5.0%	
27-Jul	3,232	2,900	456	44	22	120							0	94	66	74	160	210	240	320	692	1,486	460	942	11,518	4.2%	
28-Jul	1,020	100	-2	0	18	-54							0	6	20	120	84	100	72	88	300	106	90	356	2,424	0.9%	
29-Jul	92	-104	-50	-8	-20	-32							16	28	14	72	72	234	196	172	102	354	340	310	1,788	0.6%	
30-Jul	96	40	46	0	12	-6							60	70	66	144	330	410							1,268	0.5%	
31-Jul																			-12	56	-104	-190	-90	326	-14	0.0%	
1-Aug	-40	0	6	10	0																				-24	0.0%	
2-Aug	-48	-12	-8	14	0	-44	-64	-6	6	14	-16	0	-8	0								-76	-32	-92	-372	-0.1%	
3-Aug																22	84	22	84	46	110	80	90	98	636	0.2%	
4-Aug	88	58	14	28	18	22							30	32	50	52	26	104	126	112	60	132	68	20	1,040	0.4%	
5-Aug	54	28	30	-8	16	12							24	60	40	26	62	80	74	54	106	50	46	50	804	0.3%	
6-Aug	44	4	26	14	14	8							4	-2	12	16	40	14							194	0.1%	
7-Aug																			0	0	52	18	38	70	178	0.1%	
8-Aug	40	46	6	20	12	10	98	52	22	-2	0	14	20	12	32	30	28	34	38	20	18	42	96	120	808	0.3%	
9-Aug	28	16	10	8	-6	-12							2	6											52	0.0%	
10-Aug	Flooded out																								0	0.0%	
11-Aug	Flooded out																								0	0.0%	
12-Aug	Flooded out																								0	0.0%	
13-Aug	Flooded out																								0	0.0%	
14-Aug	Flooded out																								0	0.0%	
15-Aug	-2	0	2	4	4	0	0	14	10	2	6	-16	2	2	-2	End of the counting season										26	0.0%
Total	45,472	37,646	22,892	6,904	-896	254	-4,724	-3,268	-1,218	10	66	142	286	1,186	2,234	11,726	11,004	12,214	5,824	11,154	11,042	26,072	40,972	39,788	276,782		

Appendix Table 3. Reported hourly king salmon observations at the Nome River counting tower, Norton Sound, 1994.

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total					
24-Jun	Start of the counting season												0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25-Jun	0	0	0	0	0	0																				0	0.00%				
26-Jun													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	
27-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%				
28-Jun	0	0	0	0	0	0																				0	0.00%				
29-Jun	0	0	0	0	0	0																				0	0.00%				
30-Jun	0	0	0	0	0	0																				0	0.00%				
1-Jul	0	0	0	0	0	0																				0	0.00%				
2-Jul	0	0	0	0	0	0																				0	0.00%				
3-Jul	0	0	0	0	0	0																				0	0.00%				
4-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	4.00%					
5-Jul	0	0	0	0	0	0																				0	0.00%				
6-Jul	0	0	0	0	0	0																				2	4.00%				
7-Jul	0	0	0	0	0	0																				0	0.00%				
8-Jul	0	0	0	0	0	0																				-2	-4.00%				
9-Jul	0	2	0	0	0	0																				2	4.00%				
10-Jul																										0	0.00%				
11-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	4	8	16.00%						
12-Jul	2	0	0	0	0	0																				2	4.00%				
13-Jul	2	0	0	0	0	0																				4	8.00%				
14-Jul	0	0	0	0	0	0																				4	8.00%				
15-Jul	0	0	0	0	0	0																				2	4.00%				
16-Jul	0	0	0	-4	0	0																				-4	-8.00%				
17-Jul																										0	0.00%				
18-Jul	0	0	0	0	0	-2	0	-2	0	0	0	0	0	0	0	0	0	0	0	2	0	2	6	6	12.00%						
19-Jul	0	0	0	0	0	0																				4	8.00%				
20-Jul	0	0	0	0	0	0																				0	0.00%				
21-Jul	0	0	0	0	0	0																				4	8.00%				
22-Jul	0	0	0	0	0	0																				2	4.00%				
23-Jul	0	2	0	0	0	0																				2	4.00%				

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Appendix Table 3. (Page 2 of 2).

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total
24-Jul																			0	2	6	0	0	0	8	16.00%
25-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26-Jul	2	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	2	4.00%
27-Jul	0	2	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	2	4.00%
28-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31-Jul																			0	0	0	0	0	0	0	0.00%
1-Aug	0	0	0	0	0	0																			0	0.00%
2-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0								0	0	0	0	0.00%
3-Aug																0	0	0	0	0	0	0	0	0	0	0.00%
4-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
5-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
6-Aug	0	0	0	0	0	0							0	0	0	0	0								0	0.00%
7-Aug																			0	0	0	0	0	0	0	0.00%
8-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
9-Aug	0	0	0	0	0	0							0	0											0	0.00%
10-Aug																									0	0.00%
11-Aug																									0	0.00%
12-Aug																									0	0.00%
13-Aug																									0	0.00%
14-Aug																									0	0.00%
15-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	0.00%
Total	6	6	0	-4	0	-2	0	-2	0	0	0	0	0	0	0	-2	2	4	-2	8	14	4	8	10	50	

Appendix Table 4. Reported hourly coho salmon observations at the Nome River counting tower, Norton Sound, 1994.

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total							
24-Jun	Start of the counting season												0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%		
25-Jun	0	0	0	0	0	0																				0	0.00%						
26-Jun													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%			
27-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%							
28-Jun	0	0	0	0	0	0																				0	0.00%						
29-Jun	0	0	0	0	0	0																				0	0.00%						
30-Jun	0	0	0	0	0	0																				0	0.00%						
1-Jul	0	0	0	0	0	0																				0	0.00%						
2-Jul	0	0	0	0	0	0																				0	0.00%						
3-Jul	0	0	0	0	0	0																				0	0.00%						
4-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%							
5-Jul	0	0	0	0	0	0																				0	0.00%						
6-Jul	0	0	0	0	0	0																				0	0.00%						
7-Jul	0	0	0	0	0	0																				0	0.00%						
8-Jul	0	0	0	0	0	0																				0	0.00%						
9-Jul	0	0	0	0	0	0																				0	0.00%						
10-Jul																										0	0	0	0	0	0	0	0.00%
11-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%							
12-Jul	0	0	0	0	0	0																				0	0.00%						
13-Jul	0	0	0	0	0	0																				0	0.00%						
14-Jul	0	0	0	0	0	0																				0	0.00%						
15-Jul	0	0	0	0	0	0																				0	0.00%						
16-Jul	0	0	0	0	0	0																				0	0.00%						
17-Jul																										0	0	0	0	0	0	0	0.00%
18-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%							
19-Jul	0	0	0	0	0	0																				0	0.00%						
20-Jul	0	0	0	0	0	0																				0	0.00%						
21-Jul	0	0	0	0	0	0																				0	0.00%						
22-Jul	0	0	0	0	0	0																				0	0.00%						
23-Jul	0	0	0	0	0	0																				0	0.00%						

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Appendix Table 4. (Page 2 of 2).

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total	
24-Jul																			6	0	0	0	0	4	10	2.04%	
25-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0.41%	
26-Jul	0	0	0	0	0	0							0	0	0	0	0	0	8	6	0	4	0	34	52	10.61%	
27-Jul	16	20	18	0	0	0							0	2	0	2	0	4	4	2	0	6	0	8	82	16.73%	
28-Jul	0	0	-2	0	0	0							0	0	2	2	6	4	0	2	0	0	0	0	14	2.86%	
29-Jul	0	0	0	0	0	0							0	0	0	0	0	8	2	0	4	0	2	0	16	3.27%	
30-Jul	0	0	6	0	0	2							0	2	0	0	0	0							10	2.04%	
31-Jul																			0	10	-2	4	0	0	12	2.45%	
1-Aug	8	0	0	0	0																				8	1.63%	
2-Aug	0	0	0	0	0	2	-2	-2	2	2	2	0	0	0								-4	2	-6	-4	-0.82%	
3-Aug																2	2	4	0	0	0	2	4	-2	12	2.45%	
4-Aug	6	4	0	2	0	0							0	0	0	0	0	0	0	0	0	10	2	2	26	5.31%	
5-Aug	0	0	0	0	0	0							0	0	0	2	2	0	0	4	0	2	2	-2	10	2.04%	
6-Aug	10	0	0	4	0	2							0	0	0	4	0	0							20	4.08%	
7-Aug																			0	0	2	12	8	6	28	5.71%	
8-Aug	0	6	4	0	0	0	6	0	0	0	0	10	0	0	0	0	2	0	12	12	4	4	18	10	88	17.96%	
9-Aug	30	16	14	2	0	0							0	0											62	12.65%	
10-Aug																									0	0.00%	
11-Aug				Flooded out																					0	0.00%	
12-Aug																									0	0.00%	
13-Aug																									0	0.00%	
14-Aug																									0	0.00%	
15-Aug	2	8	2	4	0	0	0	0	8	4	12	-2	4	0	0	End of the counting season										42	8.57%
Total	72	54	42	12	0	6	4	-2	10	6	14	8	4	4	2	12	12	20	32	36	8	40	38	56	490		

Appendix Table 5. Reported hourly Dolly Varden observations at the Nome River counting tower, Norton Sound, 1994.

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total												
24-Jun	Start of the counting season												0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%						
25-Jun	0	0	0	0	0	0																									0	0.00%						
26-Jun													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%					
27-Jun	0	0	4	0	0	-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-10	-6.85%											
28-Jun	0	0	0	0	0	0													0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%						
29-Jun	0	0	-2	0	0	0													0	0	0	0	0	0	0	0	0	0	0	0	0	-2	-1.37%					
30-Jun	0	0	0	0	0	0													0	0	0	0	0	0	4	0	0	0	0	0	0	4	2.74%					
1-Jul	0	0	0	0	0	0													0	0	0	0	0	0	0	0	2	0	0	0	0	2	1.37%					
2-Jul	0	0	0	0	0	0													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%					
3-Jul	0	4	-2	2	0	0													0	0	0	0	0	0	0	0	0	2	0	2	8	5.48%						
4-Jul	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	2	10	0	0	0	0	0	22	15.07%											
5-Jul	12	14	4	2	0	0													0	0	0	0	0	0	0	0	0	0	0	0	32	21.92%						
6-Jul	4	2	4	0	-4	0													0	0	0	0	0	0	0	0	0	0	2	0	8	5.48%						
7-Jul	0	0	0	0	0	0													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%					
8-Jul	0	0	6	8	0	0													0	0	0	0	0	0	0	0	0	0	0	0	14	9.59%						
9-Jul	10	4	4	4	-2	0													0	0	0	0	0	0							20	13.70%						
10-Jul																									16	8	4	0	0	0	0	0	0	0	28	19.18%		
11-Jul	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	12	8.22%												
12-Jul	0	0	0	0	0	0													0	0	0	-2	0	0	0	0	0	0	0	-2	-1.37%							
13-Jul	0	0	0	0	0	0													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%					
14-Jul	0	0	0	0	0	0													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%					
15-Jul	0	0	0	0	0	0													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%					
16-Jul	0	0	0	0	0	0													0	0	0	0	0	0							0	0.00%						
17-Jul																									0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
18-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%											
19-Jul	0	0	0	2	0	2													0	0	0	0	0	0	0	0	0	0	0	0	4	2.74%						
20-Jul	0	0	0	0	0	0													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%					
21-Jul	0	0	0	0	0	0													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%					
22-Jul	0	0	0	0	0	0													0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%					
23-Jul	0	0	0	0	0	0													0	0	0	0	0	0							0	0.00%						

- continued -

Appendix Table 5. (Page 2 of 2).

Shaded areas indicate hours not counted

Date	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total	% of Total
24-Jul																			0	0	0	2	0	4	6	4.11%
25-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29-Jul	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30-Jul	0	0	0	0	0	0							0	0	0	0	0	0							0	0.00%
31-Jul																			0	0	0	0	0	0	0	0.00%
1-Aug	0	0	0	0	0																				0	0.00%
2-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0								0	0	0	0	0.00%
3-Aug																0	0	0	0	0	0	0	0	0	0	0.00%
4-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
5-Aug	0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
6-Aug	0	0	0	0	0	0							0	0	0	0	0	0							0	0.00%
7-Aug																			0	0	0	0	0	0	0	0.00%
8-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
9-Aug	0	0	0	0	0	0							0	0											0	0.00%
10-Aug																									0	0.00%
11-Aug				Flooded out																					0	0.00%
12-Aug																									0	0.00%
13-Aug																									0	0.00%
14-Aug																									0	0.00%
15-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	End of the counting season								0	0.00%	
Total	26	26	18	22	-6	-12	0	0	0	0	0	0	0	0	0	-2	0	4	24	10	16	12	2	6	146	